

Agenda: Building Water Heating Roadmap Development

February 25-26, 2004

Lord Baltimore Hotel, Baltimore, MD

Objectives/Outcomes: An Integrated Water Heater Technology Roadmap

- Examine Current Industry Trends and Drivers
- Identify Critical System Requirements Across Water Heating Technologies
- Identify Economics Cost, Performance, Market/Institutional Issues for Each Major Technology Class
- Identify Specific Critical Needs for Each Major Technology

Wednesday, February 25th: Surveying the Technologies

8:00–8:30 **Continental Breakfast** (Versailles Foyer)

Overview (Versailles Room)

8:30–8:50 **Welcome and Overview**

- • **Michael McCabe**, Building Technologies Program Manager, DOE
- • **Raymond Sutula**, Solar Energy Technologies Program Manager, DOE

8:50–9:00 **Agenda Review**

Industry Perspectives

9:00–9:20 **Les Nelson**, California Solar Energy Industries Association ([PDF 156 KB](#))

9:20–9:40 **Mark Menzer**, Sr. Vice President, Air Conditioning and Refrigeration Technology Institute ([PDF 153 KB](#))

9:40–10:15 **Harvey Sachs** ([PDF 38 KB](#)) **Gary Klein** ([PDF 681 KB](#)) **Christoph Fark** ([PDF 1.5 MB](#))

10:15–10:30 **BREAK** (Versailles Foyer)

Overview: DOE Water Heating Research/Deployment

10:30–12:30 Brief Presentations/Question/Answer

10:15–10:35 **Glenn Strahs**, Solar Water Heating Research ([PDF 351 KB](#))

10:35–10:55 **Arun Vohra**, High Efficiency Water Heating Research ([PDF 179 KB](#))

10:55–11:15 **Sam Rashkin**, Energy Star (Environmental Protection Agency) ([PD 395 KB](#))

11:15–11:35 **Ronald Fiskum**, CHP Systems ([PDF 6 MB](#))

11:35–11:55 **Anne Crawley**, Federal Energy Management Program ([PDF 622 KB](#))

11:55–12:15 Dwight Bailey, Weatherization Assistance Program ([PDF 127 KB](#))

12:30–1:30 LUNCH

Luncheon Speaker **Mark Kendall**, Vice President, Technical Affairs,
Gas Appliance Manufacturers Association ([PDF 2.2 MB](#))

Where We Need to Go

1:30–2:00 **Discussion: Describing the Current Context:**

- What are the Major Trends/ Drivers Effecting Water Heater Technologies?
-Residential, Commercial, Retrofit and New applications

2:00–2:45 **Discussion:** By 2015, What are the Critical, '**Cross-Cutting**' System Parameters or Targets for Emerging Water Heating Technologies to:

- Double the efficiency of water heaters;

- Reduce energy consumed by one-half;
And, compete in the marketplace?

Describe the 'cross-cutting' Water Heater Technology Parameters regarding:

- Economics/ Cost
- Performance
- Market
- Institutional Issues

Key Questions for each grouping:

Economics: What do water heating technologies need to cost for residential, commercial, retrofit and new applications? For cost, is the key issue first cost? Lifecycle cost? Who makes the purchase decisions for different market segments? What is included in costs?

Performance: Recovery? Overall capacity? Efficiency? Lifetime? Failure rate? Nature of failure (leaking versus heating element failure)? Moisture/humidity issues? Noise? Appearance? New capabilities – diagnostics and controls, ability to set temperature for different fixtures or users, leak detection, communications for utility or other control? Side benefits like dehumidification?

Market: Perceived versus real reliability? Financing availability? Customer knowledge/education? Knowledge of plumbers and other trades? What are the market segments? How big are the market segments? Potential for integration of water/space heating? Utility interest in demand side management? Marketing alliances with utilities, real-estate developers?

Institutional: Inspector knowledge? Installer training and certification? Code and covenant restrictions? Solar access? Building codes? Fire codes? Eligibility for incentives? Insurance issues? Venting and safety issues? Environmental benefits that would increase support?))

2:45-3:00 **BREAK** (Versailles Foyer)

3:00–4:50 **Breakout Group Discussion:** Further Refining and Specifying Critical, Cross-Cutting System Parameters/Requirements.

- Economics/ Cost Group -Versailles Room
- Performance Group -Versailles Room
- Market Group -Royal Conference Foyer (19th Floor)
- Institutional Issues Group -Hanover Suite 'A' (19th Floor)

4:50–5:10 **Brief Report Back**

- Summarize your group's discussion on the goal(s)?
- Which parameters/ targets seem most important in reaching the goals?

5:10-5:15 **Preview Day 2**

5:15 **Adjourn**

5:30 **Reception** (Mezzanine Foyer- Third Floor)

Thursday, February 26th:

Where We Need to Go and What We Need to Get There

8:00–8:30 **Continental Breakfast**

- 8:30-8:40 **Agenda Review**
- 8:40-9:00 **Issues/ Insights/ Hold-over from Day 1**
- 9:00-12:00 **Breakout Group Discussion:** Specific Technology Needs/Pathways to Meet the Goals
- Electric -Versailles Room
 - Natural Gas/Oil/LPG -Versailles Room
 - Solar -Royal Conference Foyer (19th Floor)
 - Crosscutting/Hybrid -Hanover Suite ‘A’ (19th Floor)
- (~10:30-10:45 Break)
- 12:30-1:15 LUNCH**
- 1:15-2:30 **Finish Breakout Group Work**
- Groups reconvene to finish prioritizing and organize their recommendations
- 2:30-2:45 **BREAK**
- 2:45-4:15 **Report Back/ Discussion on Priority Needs and Recommendations**
- 4:15-5:00 **Next Steps/Timetable/Pathway Forward**
- How to: Elicit comment/contributions from others?
Broaden the reach and participation in the Roadmapping effort?
Sustain the effort?
- 5:00 **Meeting Adjourns**